



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,704	08/25/2003	Kenichiro Nakamura	0505-1227P	9815
2292	7590	01/11/2007	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			PILKINGTON, JAMES	
PO BOX 747			ART UNIT	PAPER NUMBER
FALLS CHURCH, VA 22040-0747			3682	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		01/11/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/11/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/646,704	NAKAMURA ET AL.
	Examiner James Pilkington	Art Unit 3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 25 August 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-16 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 23 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 1/21/04.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the Belleville spring and rubber washer (clms 8, 10, 12 and 14) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title states "Vibration-proof" but the specification only discloses "vibration-reducing."
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is not proper antecedent basis for "a regulating device" as claimed in claim 1. Does the applicant mean the plane washer?

***Claim Objections***

4. Applicant is advised that should claim 4 be found allowable, claim 6 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8, 10, 12, 14 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Riley Jr., USP 3,320,824, in view of Tsergas, USP 2004/0031343 (filed 8/19/02).

Re clms 1-3, Riley discloses a gear transmission device comprising:

- A first gear (66) positioned on a first gear shaft (61) being axial movable axial (moves on splined portion 65)
- A vibration-reducing structure having an elastic member (68) being positioned between said first gear (66) and a fixed wall (51) and a regulating device (63)

Riley does not disclose that the shaft disposed between first and second fixed walls; a second shaft having a relatively large diameter gear on a first end and a relatively smaller diameter gear on a second end, wherein said small diameter gear operatively engages said first gear positioned on said first gear shaft; and a large diameter ring gear engaged with said first gear, wherein said first gear is an idle gear and said first gear shaft is an idle gear shaft.

Tsergas teaches a shaft (126) disposed between first and second fixed walls (111 and 134); a second shaft (128) having a relatively large diameter gear (122) on a first end and a relatively smaller diameter gear (125) on a second end, wherein said small diameter gear (125) operatively engages said first gear (138 via larger gear 136) positioned on said first gear shaft (126); and a large diameter ring gear (140) engaged with said first gear (138), wherein said first gear is an idle gear and said first gear shaft is an idle gear shaft for the purpose of providing a high torque resistant and strong screwless gear box that allows for greater force to be transmitted between the gears (paragraphs 0009 and 0010).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Riley and provide for the shaft disposed between first and second fixed walls; a second shaft having a relatively large diameter gear on a first end and a relatively smaller diameter gear on a second end, wherein said small diameter gear operatively engages said first gear positioned on said first gear shaft; and a large diameter ring gear engaged with said first gear, wherein said first gear is an idle gear and said first gear shaft is an idle gear shaft, as taught by Tsergas, for the purpose of providing a high torque resistant and strong screwless gear box that allows for greater force to be transmitted between the gears.

Re clms 4-7, Riley discloses a cylindrical portion (A, see Figure on following page) being formed on a first opposed end face (B) of the first gear (66) and a planar surface (C) on an end face (D) of the second fixed wall (51), wherein said elastic member (68) is surrounded by said planar surface (C) and said cylindrical portion (A); and said cylindrical portion (A) is capable of operative contact with said planar end surface (C) of said second end wall (51) and regulating a bending amount of said elastic member to a predetermined amount.

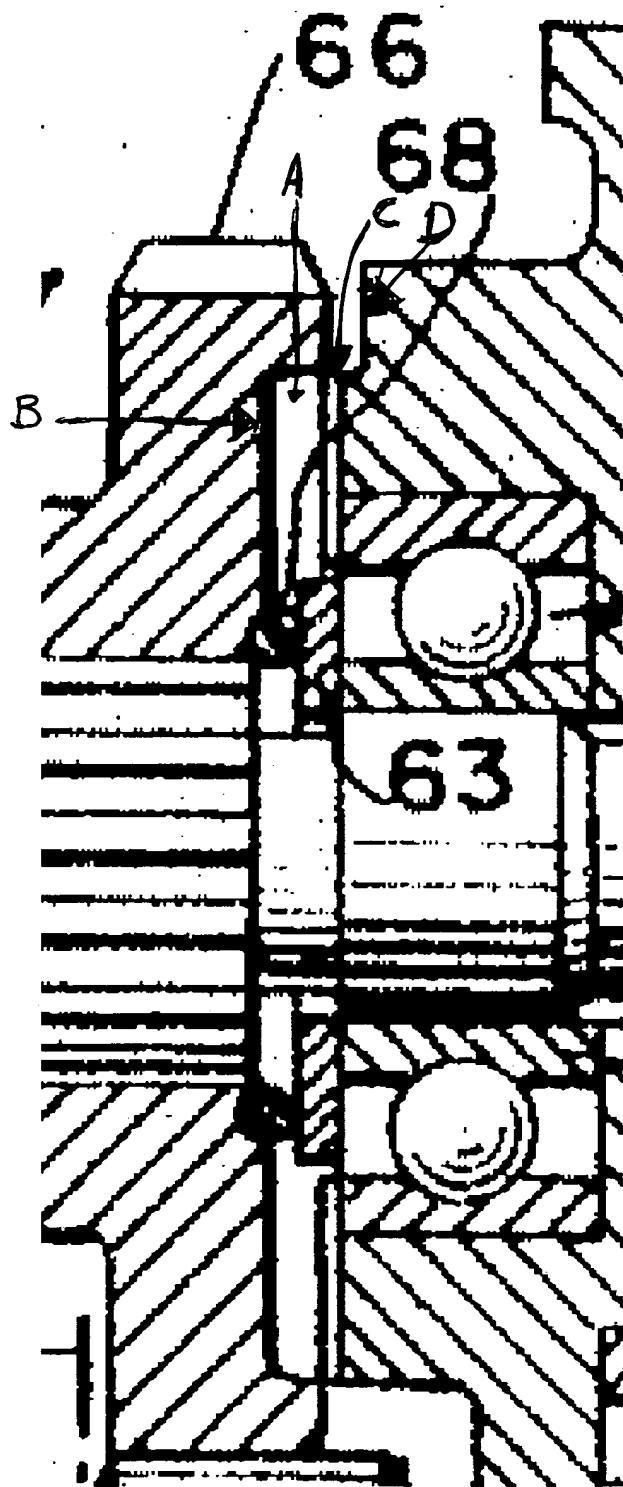


Figure taken from Riley '824 Figure 3

Re clms 8, 10, 12, and 14, Riley discloses that the elastic member (68) is a rubber washer (an O-ring is a rubber washer).

Re clm 16, Riley discloses a plane washer (63, also regulating device see specification objection above) disposed in a position opposite to said cylindrical portion (A) for surrounding said elastic member (68).

7. Claims 9, 11, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riley '824 in view of Tsergas '343 and further in view of Grant, USP 6,361,257.

Riley in view of Tsergas discloses all of the claimed subject matter as described above.

Riley in view of Tsergas does not disclose that the elastic member is a wave washer.

Grant teaches wave washer (10) used as an elastic member for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance (C1/L26-33).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Riley in view of Tsergas and use a wave washer as the elastic member, as taught by Grant, for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP  
JP  
1/4/07



RICHARD RIDLEY  
SUPERVISORY PATENT EXAMINER